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METHOD FOR DETERMINATION OF COLOUR FASTNESS OF TEXTILE MATERIALS TO DECATIZING

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NEW DELHI 110002

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January 1959

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TO
IS : 865 - 1958 METHOD FOR DETERMINATION OF COLOUR FASTNESS OF TEXTILE MATERIALS TO DECATIZING

[*Clause* 6.1(b), *line* 1] — Insert the words 'boiled off' after the words '*Cotton Blanket* —'.

(*Clause* 7.1.2, *Note*) — Substitute 'NOTE 1' for the existing 'NOTE' and insert 'NOTE 2' after 'NOTE 1' as follows:

'NOTE 2 — In cases of doubt in the colour fastness ratings as assessed by an observer, the assessment should be done by at least three observers and the overall average rating should be reported.'

(*Clause* 7.1.3, *and* Note *under* 7.1.3) — Insert the words '(*see* Note under 7.1.2)' at the end of the clause and delete the 'NOTE' under 7.1.3.

(*Clause* 7.2.3, *line* 2) — Substitute '(*see* Notes *under* 7.1.2)' for '(*see* Note *under* 7.1.3)'.

(TDC 5)

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Indian Standard

METHOD FOR DETERMINATION OF COLOUR FASTNESS OF TEXTILE MATERIALS TO DECATIZING

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 13 October 1958, after the draft finalized by the Textile Chemistry Sectional Committee had been approved by the Textile Division Council.

0.2 Colour fastness of textile materials is of considerable importance to the consumer. The fastness depends not only upon the nature and depth of shade of the dyestuff used but also upon the nature of the fibre and the method of dyeing or printing employed; the same colouring matter, when used in dyeing or printing different fibres or when applied by different methods upon the same fibre, may give vastly different results. Formulation of standard methods of test for determining colour fastness of textile materials to different agencies and processes likely to effect change in colour is, therefore, necessary.

0.3 The method of test prescribed in this standard is intended for evaluating colour fastness of textile materials to the action of steam as employed in the decatizing of wool fabrics.

0.3.1 Since it is equally important to evaluate colour fastness of textile materials to the action of other agencies and processes which affect colour, such as carbonizing with sulphuric acid, washing, dry cleaning, hot pressing, rubbing, sea water, etc, separate Indian Standards dealing with methods of test for evaluating colour fastness in respect of these agencies and processes are being issued. A complete list of such standards may be obtained from the Indian Standards Institution.

0.4 Taking into consideration the views of the producers, the consumers and the testing authorities, the Sectional Committee responsible for the preparation of this standard felt that it should be related to the manufacturing and testing practices followed in the country in this field. Furthermore, due weightage had to be given to the need for international co-ordination among standards prevailing in different countries of the world. These considerations led the Sectional Committee to base this standard mainly on the tentative method of test for colour fastness to decatizing adopted by the ISO Subcommittee for Colour Fastness Tests (ISO/TC 38/SC 1) in its third meeting at Scarborough.

0.5 This standard requires reference to IS : 768-1956 Method for Evaluating Change in Colour.

0.5.1 Wherever a reference to IS : 768-1956 appears in this standard, it shall be taken as a reference to the latest version of the standard.

0.6 In view of the decision of the Government of India to introduce in the country a uniform system of weights and measures based on the metric system, all measurements in this standard have been given in metric units.

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1. SCOPE

1.1 This standard prescribes methods for determination of colour fastness of textile materials to the action of steam as employed in the decatizing of wool fabrics.

1.2 Two tests, one for mild decatizing and the other for severe decatizing, are prescribed.

2. PRINCIPLE

2.1 A test piece of the textile material is wrapped round a perforated cylinder and steam is passed through it for 15 minutes. The test piece is then dried and the numerical rating for change in colour of the piece is evaluated with a Grey Scale. A test control fabric is used for reference.

3. SAMPLING

3.1 Sample to determine conformity of a lot of coloured textile material to a specification shall be selected so as to be representative of the lot.

3.2 Sample drawn in compliance with an agreement between the buyer and the seller to evaluate colour fastness of the material in the lot shall be held to be representative of the lot.

4. TEST PIECES

4.1 *If the material to be tested is fabric*, draw two 10×4 cm test pieces from the sample.

4.2 *If the material to be tested is yarn*, knit or weave some of the sample into fabric and draw from it two 10×4 cm test pieces; alternatively, prepare a test piece in the form of parallel lengths of yarn, place it between two 10×4 cm pieces of undyed cotton cambric and sew around the four sides to hold the yarns in place. Prepare one more test piece in a similar manner.

4.3 *If the material to be tested is loose fibre,* comb and compress enough of the sample into the form of a sheet to make a 10×4 cm test piece, place it between two pieces of undyed cotton cambric and sew around the four sides to hold the fibres in place. Prepare another test piece in a similar manner.

5. TEST CONTROL

5.1 A one percent dyeing of Diamond Brown RH Extra (Colour Index, Second Edition, Mordant Brown 33) on wool cloth shall be used as a test control to ensure that the test is carried out correctly.

NOTE — For preparation of the dyeing, *see* Appendix A.

6. EQUIPMENT

6.1 The following equipment shall be used:

a) *Decatizing Apparatus* — as illustrated in Fig. 1 or any other similar apparatus.

b) *Cotton Blanket* — weighing about 400 g/m^2, napped on both sides and of a length sufficient to wrap six times round the perforated cylinder of the decatizing apparatus.

7. PROCEDURE

7.1 Mild Decatizing

7.1.1 Wrap the cotton blanket three times around the perforated cylinder of the decatizing apparatus. Place one of the test pieces and a 10×4 cm test control around the wrapped cylinder and cover them with three further wrappings of the blanket cloth. Pass saturated but water-free steam at 110°C and at a pressure of 1·5 kg/cm^2 or 0·5 kg/cm^2 above atmospheric pressure, through the test piece and the test control for 15 minutes. Dry the test piece and the test control in air, in shade, at a temperature not exceeding 60°C.

7.1.2 Evaluate the change in colour of the treated test control by the method prescribed in IS : 768-1956 (*see* Note). If the numerical rating for change in colour is not equal to 4 yellower, then repeat the test (*see* **7.1.1**) using a fresh test piece and a fresh test control.

NOTE — The treated control should have cooled after drying and should have regained its normal moisture content before evaluation.

7.1.3 Evaluate the change in colour of the treated test piece by the method prescribed in IS : 768-1956.

NOTE — The treated test piece should have cooled after drying and should have regained its normal moisture content before evaluation.

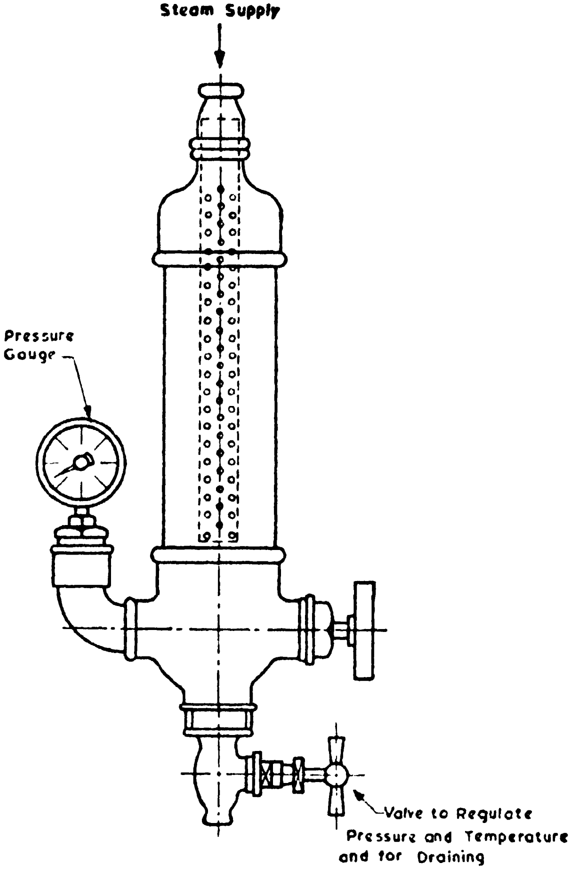

FIG. 1 DECATIZING APPARATUS (SCHEMATIC)

7.2 Severe Decatizing

7.2.1 Treat the second test piece and a fresh test control in the manner prescribed in **7.1.1** but using steam at 127°C and at a pressure of 2·5 kg/cm^2 or 1·5 kg/cm^2 above atmospheric pressure. Dry them in air in shade at a temperature not exceeding 60°C.

7.2.2 Evaluate the change in colour of the treated test control by the method prescribed in IS : 768-1956 (*see* Note *under* **7.1.2**). If the numerical rating for change in colour is not equal to 3 yellower, then repeat the test (*see* **7.2.1**) using a fresh test piece and a fresh test control.

7.2.3 Evaluate the change in colour of the treated test piece by the method prescribed in IS : 768-1956 (*see* Note *under* **7.1.3**).

8. REPORT

8.1 Report the numerical ratings for change in colour of the test piece for both mild and severe decatizing.

APPENDIX A

(*Clause* 5.1)

PREPARATION OF DYEING

A-1. Wet out well a sufficiently large-sized piece of wool cloth and enter it at 40°C into a dyebath containing one percent Diamond Brown RH Extra (Colour Index, Second Edition, Mordant Brown 33), 10 percent sodium sulphate crystals ($Na_2SO_4.10H_2O$) and 3 to 5 percent acetic acid (30 percent), all percentages being calculated on the weight of the piece, and using a liquor to material ratio of 40 : 1 (ml : g).

A-2. Bring the dyebath to the boil within 30 minutes and boil for a further period of 30 minutes. Exhaust the dyebath, if necessary, by adding carefully 3 to 5 percent acetic acid (30 percent). Boil for a further period of 15 minutes after addition of the acid. Cool the dyebath by adding cold water and add 0·5 percent potassium dichromate dissolved in water. Bring it to the boil and boil for 45 minutes. Remove the piece, rinse it in cold running tap water and dry.

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